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Fungi in Wrong Genera.

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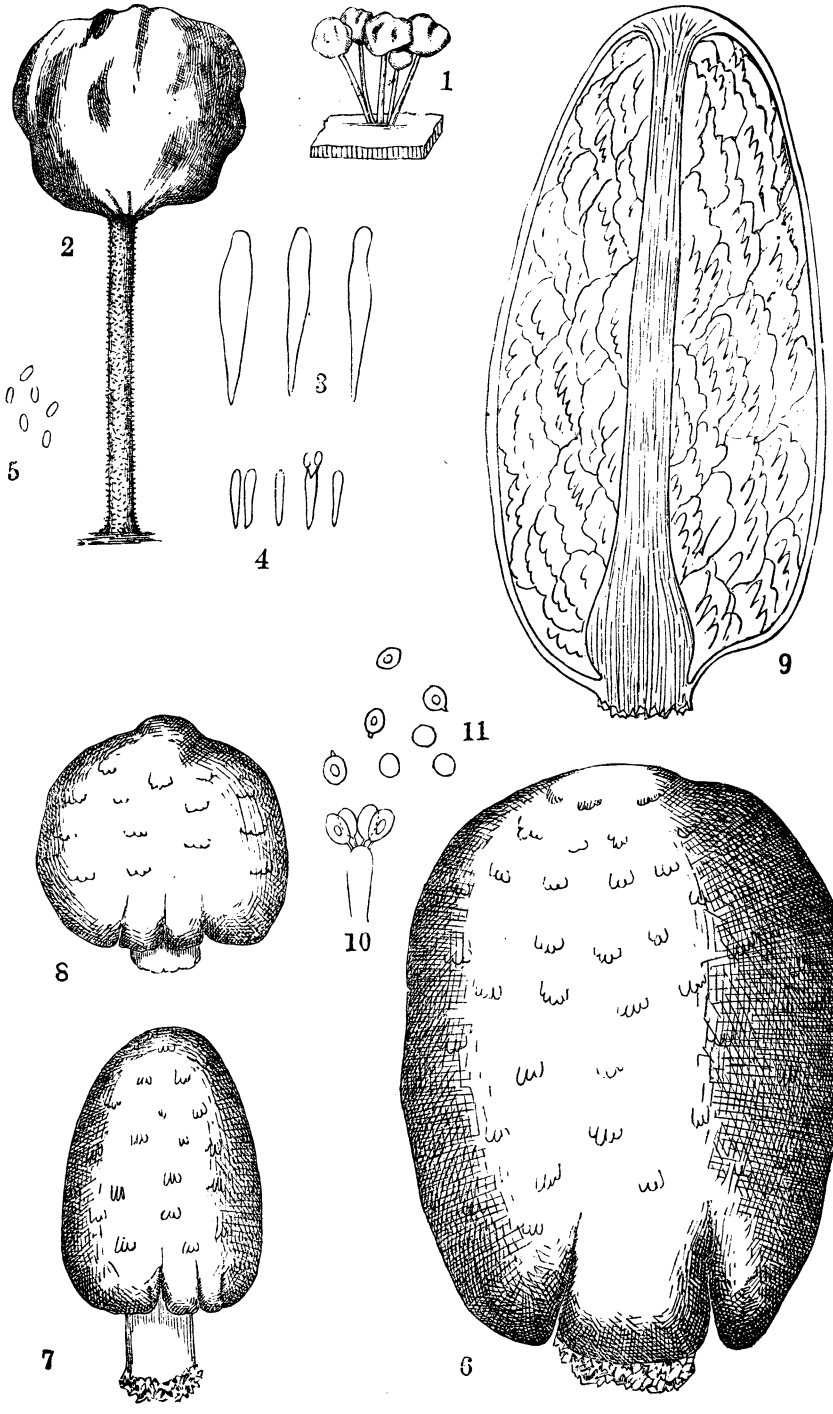
More than fifty years ago L. de Schweinitz sent specimens of a small American fungus to Prof. Elias Fries. He gave it, in his letter, the manuscript name, *Leotia inflata*; but Fries, taking it to be a species of *Mitrula*, published a description of it in Elenchus Fungorum, Vol. i. pp. 234 and 235, giving it the name *Mitrula inflata*, with a reference to the manuscript name of Schweinitz. In Epicrisis, p. 584, he repeats his diagnosis of the species thus: "*M. inflata albida*, capitulo subgloboso, inflato, stipite filiformi elongato."

In 1878, M. C. Cooke republished this diagnosis in Mycographia, p. 204, under the name *Spathularia inflata*, though it is not clear why the species was referred to *Spathularia*, for the plant has not a laterally-decurrent club, an essential character of that genus. He also published a figure of the plant, with the remark, "sporidiis ignotis." Inasmuch as this figure gives no representation of the fruit, it has seemed best to give a new one, representing the fungus more in detail. The reference in Micographia, *l. c.*, "*Leotia inflata*, Schw., Syn. Car. 1120," is erroneous, for this number belongs to "*L. circinalis*," which was evidently intended for *L. circinans*, as is shown by 738 Syn. N. A. Fungi. It does not appear that Schweinitz ever published a description of this fungus, and in the work last mentioned, at number 1068, he adopts the name *Mitrula inflata*, with a reference to the description in Elenchus Fungorum.

Having recently found and examined fertile specimens of this fungus, I have been forced to the conclusion that it belongs neither to the genus *Leotia* nor to *Mitrula*, nor yet to *Spathularia*, but to an undescribed genus of Hymenomycetes, belonging to the order Clavariei and related to the genus *Pistillaria*.

The plants usually grow in tufts of few or many individuals. Sometimes the heads are so closely crowded that they grow together, and frequently the stems are united at the base. Luxuriant specimens are about an inch high, but ordinarily they are one-half to three-fourths of an inch high. At first they are pure white, but with age the heads or clubs acquire a yellowish tint and then soon decay. The stems often remain firm and upright after the heads have decayed. The walls of the hollow club are very thin but rather tough, and when moist they will stretch considerably before the tissue will separate. Oblong, club-shaped bodies are scattered here and there in the hymenium which covers the head or club. These bear a strong resemblance to asci, and they may possibly have been thought to be such by those authors who first referred the fungus to Ascomycetous genera; but I am confident that they are not asci. I have not been able to detect spores in them, even in specimens which produced spores in abundance. They are usually a little narrowed or even contracted just below the



Figs. 1 to 5, PHYSALACRIA INFLATA. Figs. 6 to 11, SECOTIUM WARNEI, Pk.

apex, and probably correspond to the cystidia of Agarici. The basidia or sporophores are much smaller and more numerous. They form a thin stratum over the surface of the globose head. I have not clearly seen them with more than two spicules each. The genus and species may be described as follows:

PHYSALACRIA, *Gen. nov.*

(From φυσαλίς, a bladder, and ἄκρα, the top.)

Club subglobose, inflated, thin, somewhat tenacious, everywhere covered by the hymenium, supported on a distinct slender stem.

Distinguished from *Pistillaria* by the thin, inflated, bladder-like club and the distinct slender stem. The following is at present the only species known:

PHYSALACRIA INFLATA.—White, becoming tinged with yellow; club subglobose, submembranaceous, glabrous, flaccid, more or less uneven with irregular depressions or wrinkles, two to four lines broad; stem slender, equal, firm, straight, solid, four to nine lines high, minutely hairy or subfurfuraceous, mostly caespitose; spores minute, narrowly elliptical, colorless, .00016–.0002 of an inch long, and about half as broad.

Decaying wood and bark in woods and shaded places. It occurs especially in mountainous or hilly districts in summer.

The fungus described in the BULLETIN, Vol. vi, p. 77, under the name *Lycoperdon Warnei*, was referred to the genus *Lycoperdon* with some misgivings, because the spores and capillitium presented characters not quite in harmony with the characters of that genus. Afterwards, specimens of the same fungus were sent me from Wisconsin by Mr. Bundy, but some of them showed a distinct stem. This indicated that the species might belong to the genus *Podaxon*, to which, in a remark in a paper on United States species of *Lycoperdon*, it was erroneously referred. Since that time, other specimens have been received from various sources, and a careful examination of them makes it necessary to refer the species to the genus *Secotium*. Besides, the plant is so very variable that a more comprehensive description is desirable.

SECOTIUM WARNEI.—Peridium subglobose ovate or oblong, one to four inches high, one to three inches broad, squamose, white, gray or brownish, sessile or with a short stem, when mature rupturing longitudinally at the base into four to six lobes or laciniae; internal mass at at first whitish, then dingy-yellow, finally olivaceous-brown or snuff-brown; spores subglobose or broadly ovate-elliptical, colored, .00025–.0003 of an inch long,

Fields, pastures and waste places. Illinois; H. A. Warne. Wisconsin; W. F. Bundy. Iowa; C. E. Bessey. Nova Scotia; A. H. McKay. Pennsylvania; Lizzie G. Barnett.

This fungus occurs especially in wet weather in summer and autumn*. The species is related to *S. Szabolcsiense*, Hazl., which is described as having the internal mass (when mature) chestnut-colored and the peridium glabrous and splitting into ten to twelve

*Miss Barnett writes that she has also found it in May.

lobes at the base, characters not shown by our plant. The scales in our plant are thin, whitish or brownish and generally appressed and spot-like. Sometimes they are evanescent in the dried specimen, but generally they are distinct. The internal mass or hymenium is at first white and seems to vary somewhat in its appearance. Miss Barnett says concerning these fungi, that, when cut, the inside resembles white crape all crumpled up, but after exposure this becomes brown and then dusty like ordinary Lycoperdons. Prof. Bessey writes that, upon cutting open one or two of these fungi, he observed a most remarkable regularity in the spore-bearing surfaces, and that they bore a resemblance to the gills of unexpanded Agaricini. The arrangement of the variously folded and united hymenial plates and their intercellular spaces is clearly not uniform, but I doubt if any characters for specific distinction can be drawn therefrom. I certainly find no satisfactory characters for distinguishing the Pennsylvania from the Iowa specimens. This species (and indeed the whole genus) is very interesting, affording as it does a beautiful connecting link between the Hymenomycetous Agaricini and the Gasteromycetous Trichogasters. The distinct stem shown by some of the Wisconsin specimens adds another feature of resemblance between the two groups, for it would be difficult without a close examination to say that one of these stipitate specimens was not an unexpanded Agaric. When mature, the spores may, by sudden pressure, be expelled through the chinks of the peridium in little smoke-like puffs, in the same manner as the spores of puff-balls.

One other species of *Secotium* has occurred in this country, viz., *Secotium Texense*, B. & C., which, according to the description, has the hymenium black, the spores but .0002 of an inch in diameter and the stem ventricose and three inches high.

NOTE.—I have just received specimens of *Secotium Warnei*, with notes thereon, from Miss E. Butler of Minnesota. These indicate a still greater variation in the specific characters than that provided for in the description already given. First; the scales of the peridium are sometimes quite thick and broad, and are somewhat reflexed so that they give to the plant a rough or even a shaggy appearance. Second; the size is sometimes greater than the dimensions given in the description. One specimen before me measures five inches in length and the same in breadth in the widest part, and that too in the dried state. In the fresh condition it would be likely to be still larger. Third; the plants sometimes grow in tufts or compact clusters. The large specimen already mentioned is irregular in shape, the irregularity having been produced by the crowded mode of growth and the mutual pressure of contiguous individuals. The smallest specimen of the group from which the large one was taken is only three-fourths of an inch high and broad in the dried state. Miss Butler mentions two clusters or colonies, one composed of ten, the other of thirteen individuals. She says of the specimens, "they grew among rank weeds on waste land where garbage had been thrown." It is possible that in such situations they grow more luxuriantly than in open fields. Most of the Minnesota specimens

sent me, as well as those from Pennsylvania, are subglobose, from which I infer that in these localities this is the prevailing form.

EXPLANATION OF THE PLATE.—*Physalacria inflata.*—Fig. 1, a cluster of plants. Fig. 2, a single plant enlarged. Fig. 3, three cystidia x 400. Fig. 4, five basidia, one of them bearing two spores x 400. Fig. 5, six spores x 400.

Secotium Warnei.—Fig. 6, an obovate plant. Fig. 7, a small ovate plant with a distinct stem. Fig. 8, a small subglobose umbonate plant. Fig. 9, vertical section of an oblong plant, showing the hymenial plates and percurrent stem. Fig. 10, a basidium bearing four spores x 400. Fig. 11, seven spores x 400.

Additions to the Flora of the United States.—*Crataegus arborescens*, Ell., is not uncommon in the rich alluvions of the Mississippi River, near St. Louis, and probably inhabits the banks of this river and its lower tributaries down to its mouth. It has not been recognized of late and seems to be quite rare in herbaria, and is probably not in cultivation. I have not much to add to Elliott's, Torrey and Gray's and Chapman's descriptions, but may say that in this neighborhood it is the largest species of the genus, making trunks from 8–12 and, as Mr. Eggert informs me, even 18 inches in diameter, 5–7 feet high, fluted or grooved, and with a broad top, rarely bearing any thorns. The leaves, cuneiform at base, undivided or, at the end of shoots, 3-lobed, resemble in form those of *C. tomentosa*, but are smaller, much thinner and smoother, even when young, often with soft down in the axils of veins underneath; flowers in loose corymbs, only 7 or 8 lines wide; calyx smooth, neither pubescent nor glandular, with triangular acute lobes; styles 5; drupes depressed-globular, 4-5 lines thick with 5 (or rarely more) stones grooved on the back, bright red or rarely orange-colored, persisting through winter, when those of our other species, *C. coccinea*, *Crus-galli*, *subvillosa* and *tomentosa* drop off.

Sagittaria natans, Michx., has been noticed by Mr. C. E. Faxon, since a number of years in Charles River, Mass., "at the depth of 2 to 4 feet, and entirely above the influence of tide-water," and also, as he informs me, in Neponset and in Ipswich Rivers, where Mr. J. Robinson found it. It flowers there from the middle of June to the end of July, but never perfects fruit, and thus is evidently not at home in those northern waters, where it has a precarious existence by stolons; these can only winter where deep water protects them from frost. The seed was probably first brought there from the South, by water-fowl who disseminate so many water-plants. Scape and phyllodia 2-4 feet long, barely reaching the surface of the water, leaf-blades rarely developed, and then linear-lanceolate; raceme as well as pedicels often elongated in order to reach air and light; flowers 6-7 lines wide, opening in forenoon, submerged again toward evening, only one or two of the lowest whorl fertile, the others all male; male flowers with 6 exterior and 1 or 2 central stamens; filaments about as long as the nearly orbicular anthers, bulbous at base and smooth; pistils of the female flowers numerous, minute, erect, style as long as the ovary; fruit (never matured in the North) in southern specimens marked by several (5 or 7) denticulate crests on back and sides. *Sagittaria pusilla*, Pursh., must be considered as a subterrestrial form of this species, distinguished only by its size and by a 3-crested achen. *S. graminea*, with which I had confounded the northern